



PROCEEDINGS OF THE PARKS CANADA WORKSHOP ON THE MANAGEMENT OF CWD

A FIRST STEP TO DEVELOP APPROACHES TO MANAGE
CHRONIC WASTING DISEASE (CWD) IN THE NATIONAL
PARKS OF THE PRAIRIE REGION

March 18 & 19, 2008

*Western College of Veterinary Medicine,
Saskatoon, Saskatchewan*



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PARKS OF THE PRAIRIE REGION

PARKS CANADA AGENCY, 2008

FOREWORD



Photo Credit: Holger Spaedtke

This workshop was a result of a recognized need for specific direction and guidance within Parks Canada regarding the management of Chronic Wasting Disease (CWD) in western national parks. This disease is on the rise and spreading through Saskatchewan and Alberta. Though it has not yet been detected in any of the region's national parks, its arrival could constitute a serious threat to our parks' cervid populations (including deer, elk, moose, and potentially woodland caribou) and by extension to national park ecological integrity and visitor experiences. The need for collaborative management of this fatal infectious neurodegenerative disease of wild cervids has been recognized both nationally and regionally since 2004, but very little proactive discussion or concrete steps have been taken within the organization. An organizing committee was struck by Parks Canada in the fall of 2007 with the goal of coordinating a multi-jurisdictional workshop that could initiate a strategy for dealing with this disease when it is found within a national park. The workshop was held over

two days in March of 2008 at the Western College of Veterinary Medicine in Saskatoon, Saskatchewan and brought together numerous experts in the field of CWD management and research as well as neighbouring jurisdictions who have already had to deal with CWD on the ground or are in the process of strategy development.

This workshop represents a first step to begin a dialogue to allow national park managers to reach a common understanding of the complex issues surrounding CWD, to strengthen the network with our counterparts, and to begin framing out the steps ahead for collaborative action on CWD to maintain ecological integrity on a landscape scale. These proceedings attempt to summarize the key points that were made during the two-day workshop. While the ideas and recommendations compiled herein do not in any way represent approved policy or direction of Parks Canada Agency, this information will hopefully act as a catalyst to stimulate further action and discussion on the management of CWD in and around national parks.

This workshop report is freely available to all interested parties and will be made available to anyone with an interest in the management of chronic wasting disease. The organizers hope the workshop will assist in answering the broader policy questions surrounding the management of this complex wildlife disease issue in Canada.

Dr. Todd Shury, DVM
Wildlife Health Specialist, Parks Canada Agency

October 2008

ACKNOWLEDGEMENTS

We are extremely grateful to the following people and institutions who graciously sponsored this workshop: the Western College of Veterinary Medicine for hosting the workshop, Ed McLean for instigating this gathering and keeping the ball rolling throughout the planning phase as committee co-chair, Eva Paul for taking detailed notes during the workshop, Rick Proven for facilitating the tough parts, the organizing committee for their hard work in putting the workshop together and most importantly, the participants who made it a successful workshop in the end.

Our CWD Workshop Planning Committee is:

Dr. Todd Shury, Committee Co-Chair, National Office – Ecological Integrity Branch
Ed McLean, Committee Co-Chair, Prince Albert National Park
Dan Frandsen, Committee Member, Prince Albert National Park
Adrian Sturch, Committee Member, Grasslands National Park
Fiona Moreland, Committee Member, Prince Albert National Park
Ken Kingdon, Committee Member, Riding Mountain National Park
Dr. Jim Rettie, Committee Member, Western & Northern Canada Service Centre, Parks Canada
Eva Paul, Workshop Secretariat, Prince Albert National Park

EXECUTIVE SUMMARY

Chronic Wasting Disease (CWD) is a fatal infectious disease affecting members of the deer family (deer, elk, moose, and potentially woodland caribou) in North America. It is not native to North American ecosystems. The disease arrived in Canada from the United States in the 1990s, likely through movement of elk for game ranching. The first case of CWD detected among wild cervids here in Canada was in Saskatchewan back in 2000. Since then, CWD has spread extensively in Saskatchewan and Alberta. Though it has not yet been detected in any of the region's national parks, its arrival could constitute a serious threat to our parks' wildlife populations and by extension to national park ecological integrity and visitor experiences. The impact of CWD on wild cervid populations is only speculative and based on current computer models. Significant uncertainty in this area has resulted in widely varying approaches to management across North America, most of which are highly controversial.

In Saskatoon in March 2008, Parks Canada Agency (PCA) staff met with representatives of wildlife agencies from the prairie provinces and with other professionals working on chronic wasting disease management, monitoring and research. The purposes of the meeting were: to share information and educate Agency decision-makers and practitioners on CWD; clarify policy positions on the management of the disease; and to take the first steps to frame out a strategic plan to help move Parks Canada from "ideas to action" for the proactive and collaborative management of the disease within the national parks of the prairie region and at a greater landscape level beyond park boundaries.

Though a National CWD Strategy was developed and approved by the provinces and the federal government in 2005, there is currently no federal champion, funding is absent, and actions have yet to be implemented. Instead, workshop attendees learned how in the absence of federal leadership the provinces have taken action on the disease ranging from basic surveillance in Manitoba, through limited monitoring with hunter-based management in Saskatchewan, to extensive monitoring and aggressive population reduction measures to reduce deer density in Alberta. Current known distribution of CWD includes much of southern Saskatchewan, with positive cases confirmed within 100 km of Prince Albert and Grasslands National Parks. The disease is also present in eastern Alberta with a positive case about 130 km east of Elk Island National Park. Surveillance in areas close to these national parks has been limited to date. The rate of spread of CWD suggests that urgent action is required to prevent its further geographic spread into other areas of Canada's prairie provinces, including our national parks.

The National CWD Strategy was presented to the group and, like most infectious disease strategies, it emphasises early detection and prevention. These depend on

effective research and carefully planned management responses coupled with extensive education and communication initiatives. A presentation on the recent PCA experience with Bovine Tuberculosis in Riding Mountain National Park outlined the substantial Agency resources required to respond to a disease that is already established.

The second day of the workshop provided an opportunity for participants to contribute ideas on optimal investments by PCA towards preventing and managing CWD. Participants' conclusions were that PCA undertake internal development of formal strategies for CWD research, surveillance, and communication. Recommendations also included building external collaborative relationships with provinces and working to manage CWD risk at the landscape level around the parks. The need for identifying a federal champion and earmarking funds was identified as critical to promote and activate the National CWD Strategy. Parks Canada has organizational strengths and personnel that could contribute greatly to regional CWD management efforts. Doing nothing is not a likely alternative for managing CWD in national parks.

SOMMAIRE

L'encéphalopathie des cervidés (EC) est une maladie infectieuse mortelle qui frappe les membres de la famille des cervidés (cerf, wapiti, orignal et probablement caribou des bois) en Amérique du Nord. Cette maladie n'est pas indigène des écosystèmes nord-américains; elle est arrivée au Canada en provenance des États-Unis dans les années 1990, vraisemblablement lors du déplacement de wapitis destinés à l'élevage. Le premier cas d'EC décelé chez les cervidés sauvages ici au Canada a eu lieu en Saskatchewan en 2000. Depuis, l'EC s'est beaucoup répandue en Saskatchewan et en Alberta. Bien que cette maladie n'ait pas encore été recensée dans l'un des parcs nationaux de la région, son irruption pourrait constituer une grave menace aux populations d'animaux sauvages de nos parcs et, par extension, à l'intégrité écologique et aux expériences des visiteurs de nos parcs nationaux. Nous pouvons seulement nous interroger sur l'incidence de l'EC sur les populations de cervidés sauvages et compter sur les modèles informatisés actuels. Cette grande incertitude a donné lieu à des approches de gestion très différentes dans l'ensemble de l'Amérique du Nord, la plupart étant très controversées.

À Saskatoon en mars 2008, le personnel de l'Agence Parcs Canada a rencontré des représentants des organismes de gestion de la faune des provinces des Prairies et d'autres professionnels œuvrant à la gestion et à la surveillance de l'encéphalopathie des cervidés de même qu'à la recherche sur cette maladie. La réunion avait pour but de partager des renseignements sur l'EC, d'informer les décideurs et les intéressés de l'Agence, de clarifier les positions de principe sur la gestion de la maladie et de prendre les premières mesures pour élaborer un plan stratégique afin d'aider Parcs Canada à passer de l'idée au geste, c.-à-d. prendre des mesures dynamiques et concertées de gestion de la maladie dans les parcs nationaux de la région des Prairies et, à l'échelle supérieure du paysage, au-delà des limites des parcs.

Même si les provinces et le gouvernement fédéral ont élaboré et approuvé une Stratégie nationale de contrôle de l'EC en 2005, il n'y a actuellement aucun champion fédéral et aucun financement; en outre, aucune mesure n'a encore été prise. Au lieu, les participants aux ateliers ont appris la manière dont, en l'absence de leadership fédéral, les provinces ont pris des mesures à l'endroit de la maladie, comme une surveillance élémentaire au Manitoba, une surveillance limitée et une gestion faite à l'aide des chasseurs en Saskatchewan ainsi qu'une surveillance étroite et une réduction draconienne de la population pour abaisser la densité de cervidés en Alberta. Actuellement, l'EC sévit dans une grande partie du Sud de la Saskatchewan, où on a confirmé des cas à moins de 100 km des parcs nationaux de Prince Albert et des Prairies. La maladie est également présente dans l'Est de l'Alberta où on a recensé un cas à environ 130 km à l'est du parc national Elk Island. Jusqu'à maintenant, les régions situées à proximité de ces parcs nationaux font l'objet d'une surveillance limitée. En

raison de la vitesse de propagation de l'EC, nous devons prendre des mesures urgentes pour freiner l'étalement géographique avant que la maladie ne se retrouve dans d'autres régions des provinces des Prairies, y compris dans nos parcs nationaux.

La Stratégie nationale de contrôle de l'EC a été présentée au groupe et, comme la plupart des stratégies sur les maladies infectieuses, elle met l'accent sur la détection précoce et la prévention. Ces stratégies reposent sur une recherche efficace et une gestion attentivement planifiée, de même que sur des initiatives élaborées d'éducation et de communication. Une présentation sur l'expérience récente de Parcs Canada à propos de la tuberculose bovine dans le parc national du Mont-Riding a donné un aperçu des ressources importantes de l'Agence nécessaires pour combattre une maladie déjà établie.

Au cours du second jour de l'atelier, les participants ont pu lancer des idées sur la manière dont l'Agence Parcs Canada pourrait optimiser son investissement dans la prévention et la gestion de l'EC. Les participants ont conclu que Parcs Canada devait élaborer à l'interne des stratégies officielles en matière de recherche sur l'EC, de surveillance et de communication. Ils ont aussi recommandé d'entamer des relations externes avec les provinces et de travailler à la gestion du risque d'EC en ce qui concerne le paysage autour des parcs. La désignation d'un champion fédéral et l'affectation de fonds sont des mesures primordiales pour promouvoir et lancer la Stratégie nationale de contrôle de l'EC. Parcs Canada pourrait grandement contribuer aux efforts régionaux de gestion de l'EC en raison de ses points forts organisationnels et de son personnel. Ne rien faire n'est pas un choix dans la gestion de l'EC dans les parcs nationaux.

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BACKGROUND

Parks Canada hosted the workshop - *Management of Chronic Wasting Disease: a First Step to Develop Approaches to Manage CWD in the National Parks of the Prairie Region* – at the Western College of Veterinary Medicine in Saskatoon, Saskatchewan on March 18-19, 2008. The workshop brought together 31 CWD experts, decision makers, and field level practitioners from Parks Canada Agency, Provincial Ministries of the Environment and Agriculture representing the 3 prairie provinces, the Department of National Defence, and Canadian Cooperative Wildlife Health Centre to begin dialogue on collaborative action for the management of Chronic Wasting Disease in prairie national parks (Appendix 1).

Chronic Wasting Disease (CWD) is a fatal infectious neurological disease affecting deer, elk, moose, and potentially woodland caribou. CWD has been called the most important issue in the management of free-living cervids in North America. The disease is not part of our native ecosystems, it was recently introduced to free ranging cervids in Canada, and there are no natural barriers to its spread across Western Canada. According to Bollinger et al (2004) in *Chronic Wasting Disease in Canadian Wildlife: an Expert Opinion on the Epidemiology and Risks to Wild Deer*¹, this disease has the potential to reduce cervid populations in the long term and create major socio-economic impacts. The geographic extent of the infection in wild cervids is on the rise across the western prairies and is spreading. Approaches to disease management by lead provincial government agencies have been political, complex and controversial in nature and of questionable efficacy. A joint federal-provincial CWD disease control strategy was developed and approved in 2005 but to date there has been little action on the ground. From a Parks Canada Agency (PCA) perspective, there may still be time for those parks at the leading edge of the disease extent to take action now to slow or halt the progress of the disease before it spreads into the national parks of the region. We must position ourselves strategically and take proactive steps to try to minimize the risks of the disease reaching our national parks. We must also look ahead and reach common ground on our Agency's position and options, if and when, the disease does strike. Both the key and challenge will be to engage, influence, and collaborate with our respective provincial governments and the Canadian Food Inspection Agency (CFIA) that hold overall jurisdiction for disease management at the landscape level beyond our national park boundaries.

This workshop represents a first step to allow park decision makers and practitioners to reach a common understanding of the issues and policy, to strengthen the network with our federal / provincial / territorial counterparts, and to begin framing out the steps ahead for proactive and collaborative action on CWD to maintain park ecological integrity and wildlife health on a landscape scale.

¹ Bollinger T, Caley P, Merrill E, Messier F, Miller MW, Samuel MD, Vanopdenbosch E. 2004. Chronic wasting disease in Canadian wildlife: an expert opinion on the epidemiology and risks to wild deer. Report Submitted to the Canadian Cooperative Wildlife Health Centre, Western College of Veterinary Medicine, Saskatchewan, SK, p.32.

PURPOSE & OBJECTIVES

The objectives of this workshop were to:

- Educate Agency decision-makers and practitioners on CWD;
- Clarify policy positions on the management of CWD;
- Frame out the beginnings of a strategic plan to help move Parks Canada from “ideas to action” for the proactive and collaborative management of CWD within the national parks of the prairie region and at a greater landscape level beyond park boundaries.

AGENDA & FORMAT

The two-day workshop was chaired by Dr. Todd Shury DVM, Parks Canada’s Wildlife Health Specialist. Sessions were structured to facilitate interaction and discussion between participants and provide networking opportunities (Appendix 2). Presentations from experts and practitioners fostering information exchange and shared perspectives were the highlight on Day 1. On Day 2, the group participated in a series of facilitated discussions and breakout sessions to develop proposed action plans for priority strategies related to the collaborative management of CWD in prairie national parks.

Day 1 sessions helped participants reach a common understanding of the complex issues surrounding CWD and build capacity among the group in support of action planning sessions to follow on Day 2. A series of short presentations provided participants with an overview on the biology of CWD and current trends in its research and management. This was followed by provincial status reports on disease monitoring, prevalence, and management action for Alberta, Saskatchewan and Manitoba. Case studies were also presented which highlighted collaborative management of wildlife disease on a landscape level across jurisdictions by federal land managers such as Riding Mountain National Park and the Department of National Defence, Canadian Forces Bases at Suffield and Wainwright, Alberta. A primer on Canada’s federal-provincial CWD Control Strategy and its implications for Parks Canada rounded out the day.

The stage was set for strategic action planning on Day 2 with a presentation, followed by lively discussion among participants, regarding clarification of Parks Canada policies on disease management. The subsequent action planning sessions were facilitated by Rick Proven, Project Manager, National Training Unit for Resource Conservation, Ecological Integrity Branch, Parks Canada. In the late morning participants broke into four groups and participated in an “idea harvest” exercise to answer the question *“What collaborative actions on CWD can we take to maintain ecological*

integrity?”. Individual ideas were captured by groups on cards. A total of 55 ideas were generated. Groups reassembled into the plenary to sort the cards with ideas harvested by action theme/category and then name the collections of related actions with broad category headings. A total of nine strategic actions categories were identified. After lunch, breakout groups spent the afternoon preparing strategic action plans for a number of strategic action categories using an action planning worksheet as their guide (Appendix 3). Breakout participants self-selected which strategic action category they would work on based on various considerations such as which strategic category they felt to be critically important for further development on this disease management issue, as well as their personal interests and expertise. Participants were allowed to choose from all nine categories, but only six were singled out to work on. Using the action planning worksheet, these six strategic action categories were analyzed, discussed and summarized by the various breakout groups each consisting of three to five participants. Action plans for the six categories were presented to the plenary group and a discussion then ensued on how to turn these actions into reality. A series of recommendations emerged from plenary on our next steps.

COMMUNICATION OF RESULTS

A summary of the workshop has been compiled in this report for distribution to workshop participants, partner agencies, and any other stakeholders with an interest in the management of Chronic Wasting Disease. The organizers hope the workshop will stimulate further action and discussion on the management of CWD in and around national parks, as well as assist in answering the broader policy questions surrounding the management of this complex wildlife disease issue in Canada.

This publication is supported by a companion CD containing digital versions of the workshop presentations. For a copy of the CD, please contact:

- Dr. Todd Shury (Email: todd.shury@pc.gc.ca; Phone: 306.966.2930) or,
- Ed McLean (Email: ed.mclean@pc.gc.ca; Phone: 306.663.4537).

INFORMATION EXCHANGE, PERSPECTIVES & CASE STUDIES: A SUMMARY OF PRESENTATIONS

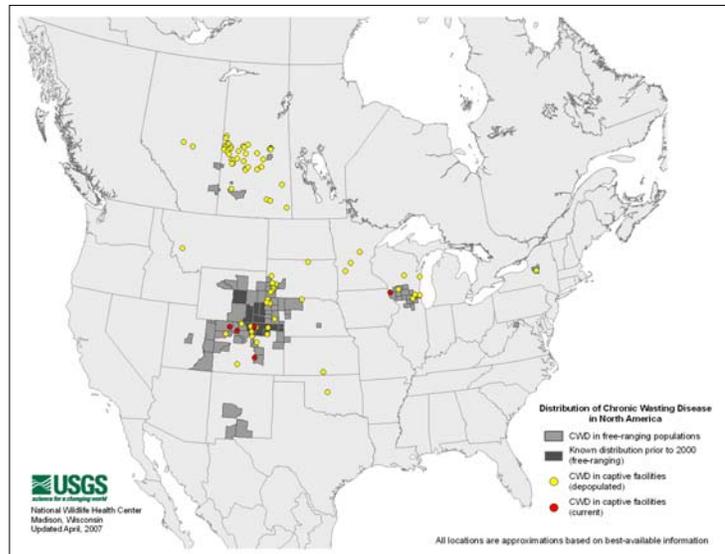
Overview of the biology of Chronic Wasting Disease

Todd Shury, Parks Canada Agency

Dr. Shury reviewed the currently known aspects of Chronic Wasting Disease (CWD) and how it relates to other TSEs (Transmissible Spongiform Encephalopathies) of domestic animals and humans such as scrapie, BSE (Bovine Spongiform Encephalopathy) and kuru. A short history of how CWD is believed to have arrived in Saskatchewan and Alberta in the past two decades was then presented. A review of CWD pathology, distribution in North America, diagnosis, pathogenesis, transmission, clinical signs, environmental detection, zoonotic potential, and a brief discussion of attempts at control and management in North America was also presented.

Issues raised during discussion included:

- There are currently seven different known strains of scrapie and there are many different strains of CWD currently being identified and some of these seem to have differential infectivity and pathogenesis;
- Impact on carnivores seems to be minimal with ongoing work being done in Colorado on cougars. Canids (wolves, coyotes, foxes) seem to be very resistant to CWD and other TSEs;
- New cases that have showed up in the US are associated with both transfers of live animals as well as animal parts (e.g. cases associated with a taxidermist in NY state);
- Tests for CWD are fairly sensitive (i.e., reliably detect CWD when it is present) and specific (i.e., show positive results only to CWD), but they depend on the tissue being tested - with retropharyngeal lymph node and obex allowing the earliest detection in deer.

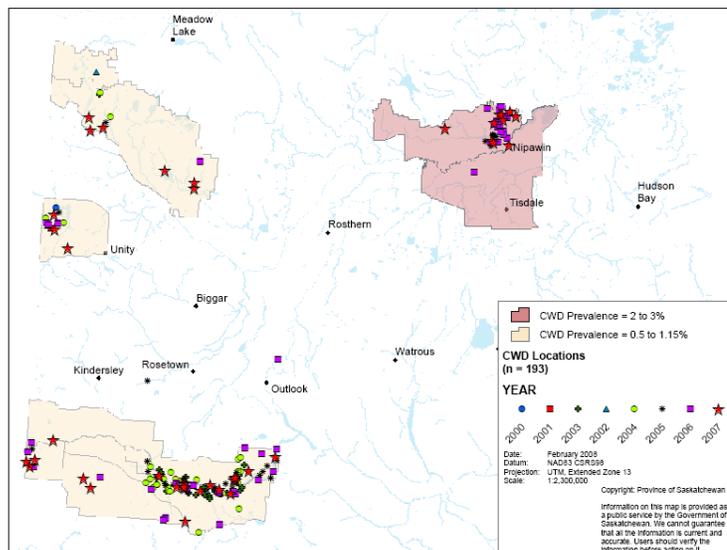


Distribution of Chronic Wasting Disease among captive and wild cervids in North America as of April 2007 (Source: USGS, National Wildlife Health Centre Website)

Overview of current trends in CWD research & management

Trent Bollinger, Canadian Cooperative Wildlife Health Centre

Dr. Bollinger presented a summary of research to date in southern Saskatchewan on the distribution and efforts to model CWD in a prairie landscape. Current research is focusing on landscape genetics, radio collaring and movement of deer and other diseases as surrogates of CWD. For this latter research a gamma herpes virus is showing some promise. Genetics has revealed little population structure for Saskatchewan deer herds and little or no resistance to CWD. Radio collaring has revealed fairly small home ranges with dispersals and seasonal movements outside current Herd Reduction Area boundaries. The proportion of population infected has remained stable in some areas (Manitou Sand Hills) while it appears to have increased rapidly in others (Zone 50). Targeted surveillance has relied on hunter sampled deer and elk. This program tested over 37,000 samples over the last decade, but suffers from poor location information for some years and samples. Passive surveillance utilizing clinically ill deer has revealed new foci of CWD in Saskatchewan and Alberta, as well as discovering other wildlife diseases. Hunting pressure does not seem to affect distribution of deer during fall, but there are seasonal migration patterns that are quite regular and predictable. Point sources of high deer congregation (grain piles, hay storage areas) and other high-density deer areas may be important for CWD transmission and persistence. This project hopes to develop a landscape model to predict CWD transmission and spread in conjunction with related research projects in Alberta.



Prevalence of Chronic Wasting Disease in wild deer in Saskatchewan (2000- 07)
(Source: Saskatchewan Ministry of the Environment, Government of Saskatchewan)

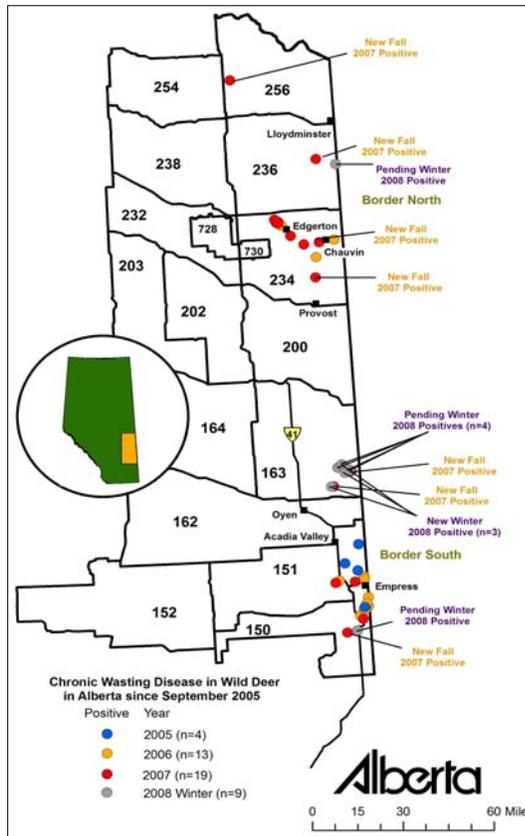
Issues raised during discussion included:

- Potential for transmission of CWD to other wild species such as woodland caribou was discussed;
- Regarding the potential for transfer of CWD to cattle, the risk seems low to negligible;
- Outfitters and hunters are reluctant to submit heads for testing because of negative effects associated with positive diagnosis. Outfitters groups in Alberta support current CWD management as they see the positive benefits of doing something now;

- Baiting and feeding is legal in Saskatchewan and outfitters see removal of this practice as a threat to their livelihoods, unlike in Alberta where baiting and feeding of ungulates is currently not allowed;
- Saskatchewan currently spends about \$500,000 annually to manage CWD;
- CWD prevalence in other endemic areas like Colorado and Wyoming is as high as 20% in mule deer while it tends to be lower in elk and white-tailed deer:
- From the point of view of opportunities for contact with infected mule deer, white-tailed deer do not seem to be as strongly associated with riparian areas and drainages as mule deer in southern Saskatchewan;
- A strong communications program was essential to meeting the needs of stakeholders and landowners in the initial years of CWD management in Saskatchewan and included meetings, public advisory committees and mail-outs.

Chronic wasting disease in wildlife: Alberta's experiences

Margo Pybus, Alberta Sustainable Resource Development



Chronic Wasting Disease in wild deer in Alberta since 2005 (Source: Alberta Fish & Wildlife, Government of Alberta)

Based on Canada's National Chronic Wasting Disease Control Strategy and the 2004 Expert Panel Report, Alberta has implemented a CWD management program and actions with three basic tenets: 1) CWD is not a native component of ecosystems, 2) it was introduced recently to free-ranging cervids in Canada, and 3) there are no natural barriers to further geographic spread in western Canada. Communications with local landowners, residents, and stakeholders has been critical to the success of the program to date. A summary of management actions taken in key areas of the province was presented with a focus on current actions which aim to reduce deer density in newly discovered CWD areas (10 km radius around a positive case) to less than 1 deer per square kilometer using ground based sharpshooters, aerial sharpshooters, and enhanced hunting opportunities in areas primarily along the Alberta/Saskatchewan border. Landowners were happier with aerial shooting as there were fewer disturbances due to rapidity of the operation and less risk of damage to sensitive landscapes in prairie habitats.

Deer are salvaged to the extent possible. Meat is distributed to local residents, local First Nations, and food banks. Hides are provided to hunting organizations for use as fund-raisers for wildlife conservation activities. Offal and carcass remains are buried in approved landfills. Some harmonization of management programs has occurred with the Government of Saskatchewan in border areas. Chronic Wasting Disease was identified in wild deer in Alberta in September 2005.

Issues raised during discussion included:

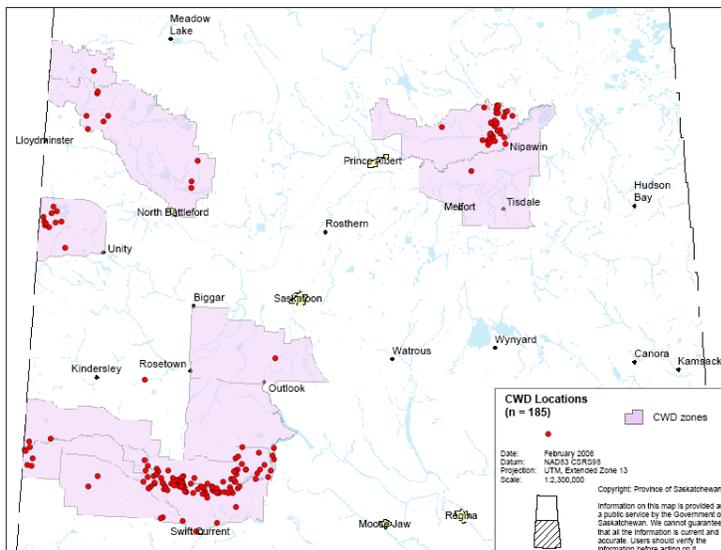
- A full-time communications officer had been assigned to the CWD portfolio in 2007, but was unavailable this field season, with some negative consequences. Information is distributed to media and local landowners before, during and after each management action is undertaken. The internet is not an effective means of communication with rural residents;

- The effectiveness of deer density reductions is not currently known but, using Alberta data, will be calculated shortly. The goal of density reduction is complete depopulation of deer in the direct vicinity of any CWD positive in order to eliminate deer that may have been infected. This approach parallels disease control actions taken in captive cervid herds and has been used successfully in livestock disease control programs.
- The program is tailored to the specific CWD risk factors, as they are known in Alberta. It is not applicable everywhere but could be considered in similar situations (recent invasion of an exotic disease in limited geographic and temporal scale).

Saskatchewan Ministry of Environment CWD management

Yeen Ten Hwang, Saskatchewan Ministry of Environment

To date, 193 cases of CWD have been confirmed in wild deer in Saskatchewan since 2000. Fifty positive game farms have also been discovered, with three being fairly recently in 2008. CWD management program has evolved considerably over the past decade in Saskatchewan based on landowner and hunters concerns. Earn-a-buck program has now been instituted in all CWD management zones for mule deer and increased opportunities are being allowed for white-tailed deer. A recommendation to ban deer baiting has been proposed internally, but there is uncertainty regarding implementation and enforcement. Saskatchewan has recently moved from a goal of



Chronic Wasting Disease in wild deer in Saskatchewan as of 2008 (Source: Saskatchewan Ministry of the Environment, Government of Saskatchewan)

CWD eradication to CWD management that has the objectives of limiting geographic spread and reducing prevalence using hunters as a primary management tool. Deer numbers have been reduced considerably in the past year due to a hard winter and this may help reduce density and transmission in the forest fringe areas. A major impediment has been public attitudes toward CWD in Saskatchewan (i.e., some hunters and landowners think it has

always been there and do not see it as a significant population threat).

Issues raised during discussion included:

- Current program seems to be driven more by public relations than science. Lack of provincial funding has hampered management and response; National CWD Control Strategy was supposed to address this;
- May not be able to detect spread to new areas as opposed to determining current geographic distribution due to lack of samples from across the entire province;
 - There is no public support or funding for a targeted removal of animals similar to what Alberta has undertaken;
- Education programs are lacking and there are myths and misconceptions which tend to drive the public's responses to CWD management.

Manitoba Conservation: Chronic Wasting Disease program

Rich Davis, Manitoba Conservation

The Government of Manitoba believes their province to be CWD free, based on hunter surveillance data to date. The province has undertaken a number of steps to ensure that it remains CWD free through surveillance programs, regulation changes, and communications/public education programs to address three areas of concern: 1) Saskatchewan and US border areas, 2) provincial elk farms, and 3) carcass import. A CWD testing program for hunter submitted elk and white-tailed deer heads was initiated over a decade ago in 1997, with samples collected from Game Hunting Areas (GHAs) adjacent to the US and Saskatchewan borders and from Riding Mountain National Park. A number of regulatory changes were enacted to reduce the risk of introduction and transmission/spread of CWD: a ban on import of native/exotic cervids; ban on possession of cervid scents and attractants; ban on import of unprocessed cervid carcasses. Other measures related to management of bovine tuberculosis will also help prevent the spread of CWD including a ban on baiting and feeding of cervids for the purpose of hunting and the power to order removal of attractants to prevent unnatural cervid herding behaviour. These management steps have been supplemented by stakeholder and public communications initiatives on the risks of CWD as well as collaboration with neighbouring jurisdictions (Minnesota, North Dakota, and Saskatchewan). In 2007, the province was finalizing a comprehensive CWD action plan focusing on prevention, containment, and eradication. The action plan is scenario drive with “what if...” responses based on the latest science.

Issues raised during discussion included:

- Regarding the provinces current CWD testing program for hunter submitted elk and white-tailed deer heads, head submission in GHAs along the Saskatchewan border is mandatory while participation is voluntary along the US border. Have noted a significant decline in participation in hunter return program last year that may be related to decision by province to discontinue giving out ball caps to participating

ATTENTION HUNTERS



**Changes to Hunting Regulations to Address
Bovine Tuberculosis (TB) & Chronic Wasting Disease (CWD)
Concerns About Manitoba's Cervids (deer, elk, moose & caribou)**

There appears to be a low prevalence of Bovine TB in the Riding Mountain regional elk herd. Bovine TB can be transmitted where cervids are concentrated at sites where feed and other attractants are placed. Wildlife regulations have been adjusted in 2002/03 to reduce cervid concentrations as follows:

Baiting of Cervids in Manitoba. Baiting of cervids for hunting is illegal. Hunting near agricultural produce that has been left in the field for hunting is also illegal. Effective immediately:

- It is an offence for any person to place a bait for hunting cervids, or to hunt within 800 metres of a cervid bait, and
- If an officer believes that farm produce is being used to attract cervids for the purpose of hunting, the officer may:
 - issue an order to remove the farm produce;
 - issue an order to fence the farm produce; or
 - post the area prohibiting hunting, the discharge of a firearm or the possession of a loaded firearm within 800 metres of the farm produce.

Feeding of Cervids in the Riding Mountain area. Effective immediately, it is illegal to feed cervids or place an attractant for cervids for any purpose, in Game Hunting Areas 23 and 23A.

Other measures that will affect all hunters, including First Nations hunters, are being taken specifically to prevent the spread of CWD into Manitoba:

Use of Scents and Attractants. Effective immediately, it is illegal for anyone to possess a substance that contains the urine, faeces, saliva, or scent glands of a cervid. These substances may transmit diseases to wild cervids.

Importing Dead Cervids. Effective immediately, it is illegal for anyone to bring into Manitoba a cervid that has been killed in another jurisdiction without first removing the head, hide, hooves, mammary glands, internal organs and spinal column, and leaving the said parts in the place of origin. The antlers and the connecting bone plate, can only be imported if all other tissue has been removed, and the skull plate has been treated with 2% chlorine (undiluted bleach, eg. Javex). The cape (skin of the head, neck and shoulders) may be brought into Manitoba provided that it is sealed in a waterproof container (e.g. 6 mil plastic bag) in a manner that ensures that no fluids, tissue or hair can escape, but must be delivered within the shortest reasonable time of entry to a licenced facility for chemical processing into a tanned product.

Government of Manitoba public notice announcing change to regulations related to baiting and feeding wildlife

(Source: Manitoba Conservation, Government of Manitoba)

hunters. In the Riding Mountain eradication area they tried other incentives such as issuing a free deer tag to hunters submitting a “quality” sample;

- Have experienced some resistance from hunting outfitters who refuse to bring in samples. Threat of pulling their tags has resulted in some cooperation;
- Levels of compliance among other hunter sampling programs were discussed comparing Manitoba’s compulsory program to other jurisdictions in Alberta and Saskatchewan where participation is voluntary and promoted through initiatives like hunter education and incentive programs like “Earn-a-Buck” tags;
- Currently the province does not have a moratorium on elk farming in Manitoba. The only condition is that farmers must get their elk from sources within the province;



Province of Manitoba’s ban of baiting and feeding of wildlife is designed to minimize unnatural cervid herding behaviour in order to reduce the risks of disease transmission (Photo Credits: Manitoba Conservation, Government of Manitoba & Parks Canada)

- The provincial agricultural ministry is currently experimenting with use of dogs to keep cervids away from farm-based attractants to help manage transmission of bovine tuberculosis;
- The provinces new CWD action plan has been developed based on perceived levels of threat. To date the province has not involved First Nations in the development of this plan.

Manitoba's bovine tuberculosis management program: Lessons learned in working collaboratively with partners to manage wildlife disease on a landscape level – the Riding Mountain National Park perspective

Ken Kingdon, Parks Canada Agency

Riding Mountain National Park's concerns with bovine tuberculosis (TB) beyond its boundaries began in 1991 with a confirmed case of the disease in domestic cattle near the national park. In 1992, TB was confirmed in a hunter killed wild elk taken nearby which was determined to be spill over from the positive farm tested in 1991. Following TB outbreaks in elk and cattle in the early 1990s and spurred by a decision by the Manitoba government to introduce cervid farming, Riding Mountain National Park became concerned about potential impacts of the disease on the park's wild elk and initiated a TB monitoring program for elk (2,500 animals). To date, six outbreaks of bovine TB have been detected in domestic cattle affecting 12 neighbouring farms and over 2000 head plus positive cases have also been detected in wild cervids, including 35 elk and 7 white-tailed deer. In response, the TB Task Group was formally established in 2000 with representatives from federal (Canadian Food Inspection Agency, Parks Canada) and provincial governments (Manitoba Conservation, Manitoba Agriculture, Food & Rural Initiatives), and industry / interest groups (Manitoba Cattle Producers Association, Manitoba Wildlife Federation). Two advisory committees were also established to support the Group: **1)** TB Stakeholder Advisory Committee (established 2003) gave a local voice to stakeholders surrounding the park (including First Nations,



Riding Mountain National Park and Manitoba Conservation are working together to deliver a hunter-killed wildlife disease surveillance program on lands around the national park
(Photo Credit: Parks Canada)

hunting outfitters and ecotourism industry sectors, fish & game advocacy group, local producers, environmental non-governmental organization, local rural municipalities); **2)** Scientific Review Committee (established 2004) to provide unbiased science-based advice.

A number of management activities have since been implemented: **1)** surveillance programs (including hunter-killed sampling and live capture programs for wild elk and white-tailed deer); **2)** various disease prevention initiatives including barrier fencing to exclude cervids from hay adopted by 90% of cattle producers within 3 miles of the park boundary as well as changes to provincial wildlife baiting/feeding regulations; **3)** research; **4)** disease control.

Communications and consultation have been fundamental to the development and implementation of this plan. Lessons learned included: **1)** the use of social sciences to help understand public attitudes and reaction to the issue and management actions emerging; **2)** sharing of information in a timely manner with a wide group of stakeholders using modern technological tools (internet, email distribution lists); **3)** have dedicated staff resources committed to communications; **4)** stakeholders must be given meaningful opportunities to be part of the decision making process; **5)** include groups on your team who are perceived to be unbiased; **6)** define the rules for form & function of advisory bodies with charter or terms of reference.

Issues raised during discussion included:

- Although they had good success with the formation of the advisory committees to the Task Group, stakeholders still seemed to want more access to the process and decisions;
- In terms of how Parks Canada and the Task Group received advice and incorporated it into their decision-making, responses were issued in writing with explanations on how advice was actually used in decision-making.

The management of Chronic Wasting Disease on federal lands at CFB Suffield and CFB Wainwright: A model for federal-provincial collaboration in Alberta.

Shane Mascarin, CFB Wainwright & Delaney Boyd, CFB Suffield, Department of National Defence of Canada

A federal-provincial collaboration model for the management of CWD on federal lands was presented for two Canadian Forces Bases located in Alberta. CFB Wainwright and Suffield each have unique land use characteristics that have shaped their respective ungulate management programs. The 620km² base at Wainwright, which includes federally managed lands and provincial government leases, is managed for multiple users including military operations, active natural gas wells (> 100 well sites), cattle grazing, and public access for mixed recreational uses (including hiking, hunting, and fishing). The base has allowed deer hunting within its boundaries since 1966. In contrast, the 2,690 km² federally owned land base of CFB Suffield does not allow for public access and hunting is prohibited. The Suffield base supports military training and research, active oil & gas wells (> 10,000 well sites), and cattle grazing. The base is also home to a National Wildlife Area (NWA) subject to special environmental protection measures. Random testing for CWD of hunter-killed whitetail deer began at CFB Wainwright in 2001 and since 2006, submission of heads for testing has become mandatory. To date over 800 heads have been tested at CFB Wainwright. In contrast, sampling at Suffield has been extremely limited because of the prohibition on hunting. To date no heads have tested positive for CWD at either base but a number of positives have turned up within 1-10 km of bases' boundaries. In anticipation, the Department of National Defence has taken proactive steps to work collaboratively with its partners from the Province of Alberta and the Canadian Wildlife Service (involvement related to federal responsibilities for the NWA at Suffield) by its participation on North and South CWD joint advisory committees. The Wainwright Committee has taken steps to enhance its surveillance to increase the number of mandatory head submissions by hunters (e.g. additional antlerless tags, special landowner hunting licences for base personnel). The Department of National Defence is also coordinating the required environmental assessments for both bases to evaluate various management options available (e.g., culling, surveillance sampling) to enable prompt action upon discovery of the disease within base boundaries.

Issues raised during discussion included:

- Parks Canada may want to take note of this proactive and collaborative approach, particularly as it relates to completion of environmental assessments well in advance of CWD disease detection within your boundaries.

Parks Canada policy: Wildlife disease management

Todd Shury & Stephen Woodley, Parks Canada Agency

A review of policy regarding wildlife disease management was summarized including essential aspects of the National Parks Act such as the imperative to maintain and restore ecological integrity as a first priority for management of national parks. Several aspects of the Guiding Principles and Operational Guidelines for Parks Canada (1994) were also presented. Active management of parks is currently allowed only when the structure or function of an ecosystem has been seriously altered and manipulation is the only possible alternative available to restore ecological integrity. All practical efforts will be made to prevent the introduction of exotic plants and animals into national parks, and to eliminate or contain them where they already exist. CWD is definitely considered an exotic disease (not native). A key aspect raised was the interpretation of whether or not CWD can affect the ecological integrity of a park. Evidence to support this can be found in two recent scientific journal articles that were briefly summarized²,³ (cited in the following footnotes). Unfortunately there is currently no scientific consensus on the population impacts of CWD in deer or other cervid populations.

Issues raised during discussion included:

- We may not know the exact origin of CWD, but it is relatively clear that it came to Saskatchewan as a result of translocation of elk for the game farm industry. It is very unlikely that it has always been here, as there is no evidence to support this notion. Balance of evidence points to a likely origin from scrapie;
- The public response to harvesting of animals for both disease control and for population control in national parks has been relatively favourable in the past few years (e.g. Elk Island National Park, Riding Mountain National Park), but there needs to be a clear impact on ecological integrity and a strong need to work with our neighbours;
- Unnatural congregations resulting in short term high densities of wild cervids need to be managed (eliminated) as there is evidence that habitat fragmentation and increased contact can lead to higher prevalence of CWD;
- COSEWIC has determined that it takes at least 50 years for a species to become “naturalized”, but there is uncertainty about how this would pertain to a disease outbreak;
- Parks Canada’s mandate does not directly include disease control; this is the mandate of the CFIA;
- PCA has good communications networks and skills that could potentially be used to inform and shape public opinion on CWD;

² Miller MW, Hobbs NT, Tavener SJ. 2006. Dynamics of prion disease transmission in mule deer. *Ecological Applications* 16(6):2208-14.

³ Edmunds DR, Lindzey FG, Grogan RG, Cook WE, Kreeger TJ, and TE Cornish. 2007. Survival rates and causes of mortality of chronic wasting disease positive and negative white-tailed deer in Wyoming. *Proceedings of the 56th Annual Wildlife Disease Association Conference*, Estes Park, CO, p. 31.

- CWD may impact ecological integrity, but it is unlikely to wipe out populations of cervids in the absence of some other contributing environmental variable. It may change the structure of populations though (less older animals due to direct mortality);
- If CWD affects boreal woodland caribou and spreads to barren ground populations, it has the potential to devastate northern economies and livelihoods if unchecked, as there would be no barriers to natural spread;
- Communications around CWD management is extremely difficult, especially when it currently only affects 1-3% of a population and we are proposing to drastically reduce deer density, especially with a disease with no known impacts on livestock and/or human health;
- Perceptions of PCA are important. We do not want to be perceived as doing nothing, but we do not want to be perceived as being overly aggressive either. At this time we should place our emphasis on supporting the provinces rather than focusing exclusively on management action within national parks. PCA needs to influence the course of this disease outside the boundaries of parks if possible and focus on prevention at this point. May want to delay or minimize the current spread of CWD until more management tools become available in the future (e.g. vaccines, diagnostic tests);
- It is very difficult to communicate scientific uncertainty. Some of the problems with risk lie within the game farm industry in Saskatchewan and we may be able to influence these groups as well as the Canadian Food Inspection Agency (CFIA).

Canada's National Chronic Wasting Disease Control Strategy: A quick overview

Todd Shury, Parks Canada Agency



(Photo Credit: Saskatchewan Ministry of Environment)

A brief overview of the National CWD Control Strategy was presented including the history, the governance structure, and the six goals of the strategy, which are based on the National Wildlife Disease Strategy: **1)** prevention of emergence; **2)** early detection; **3)** planned responses; **4)** effective management and research; **5)** education and training; **6)** communications. The strategy was approved by the Federal-Provincial / Territorial Resource Ministers Council in 2005, but a funding formula was never approved or finalized. The Canadian Wildlife Service originally

championed the strategy, but reallocation of key staff members led to political stagnation on this file. The current National Animal Health Strategy is being looked at as an alternative to reinvigorate the National CWD Control Strategy, but this process is also on hold.

Issues raised during discussion included:

- Lack of a federal champion to fund the strategy and lead it has effectively hampered any forward momentum on this file.

STRATEGIC ACTION PLANNING FOR THE MANAGEMENT OF CWD

This workshop represents a first step for Parks Canada Agency. Ideas, actions, and recommendations presented here in this proceedings represent a collection of thoughts emerging from the workshop for consideration by the Agency as we move forward to develop our strategy for managing Chronic Wasting Disease in the national parks of the prairie region. These ideas have not been fully debated, discussed, and vetted by this organization and do not in any way represent approved policy or direction of Parks Canada Agency.



Photo Credit: Parks Canada

Idea Harvest, Sorting & Strategic Action Category Naming Exercises

Workshop participants broke into groups and participated in an “idea harvest” exercise to answer the question “*What collaborative actions on CWD can we take to maintain ecological integrity?*”. A total of 55 ideas were generated. Groups reassembled into the plenary to sort ideas harvested by action theme/category and then name these categories with broad headings. A total of nine strategic actions categories were identified. These categories, with a synopsis of the key actions generated through the idea harvest exercise, are presented below:

1. Strengthen inter-jurisdictional collaboration on CWD

- i. Support trans-boundary disease policy with provinces and CFIA;
- ii. Use Grasslands National Park weed management model as a template;
- iii. Identify proactive measures in conjunction other jurisdictions;
- iv. Link to National CWD Control Strategy.

2. Renew the National CWD Control Strategy

- i. Identify a federal champion to renew this national strategy;
- ii. Build political momentum and engage leadership at federal level;
- iii. Support a Saskatchewan program review.

3. **Develop a CWD surveillance strategy**
 - i. Create optimal, common sampling and design strategy to enhance surveillance for CWD;
 - ii. Annual ungulate surveys to identify population at risk;
 - iii. Dedicated passive surveillance to enhance early detection.
4. **Develop a Parks Canada specific CWD research strategy**
 - i. Identify, fund and prioritize research needs and knowledge gaps;
 - ii. Model effects of management interventions and population impacts for CWD;
 - iii. Epidemiological risk assessment to gain knowledge of local cervid movements to understand effects on ecological integrity.
5. **Develop a CWD communications and education strategy**
 - i. Increase public awareness of CWD generally;
 - ii. Identify target audience(s) for consistent messaging and focused communications with neighbours;
 - iii. Develop communications regarding positive aspects of predators in controlling CWD;
 - iv. Identify scientifically justified messaging.
6. **Build and maintain relationships**
 - i. Create both internal and external communication networks;
 - ii. Enhance stakeholder involvement and develop positive working relationships with non-traditional parties (e.g. outfitters, hunters);
 - iii. Create understanding of other positions regarding CWD through collaborative planning and communication.
7. **Prepare a CWD response plan**
 - i. Draft local and national response plans;
 - ii. Must establish common measures of success;
 - iii. Undertake cost/benefit analysis of realistic management options currently available;
 - iv. Build a realistic, science-based response tool kit.
8. **Manage CWD risk factors at a landscape level**
 - i. Ban baiting and feeding of cervids;
 - ii. Reduce ungulate density in national parks;
 - iii. Prevent CWD from infecting caribou populations;
 - iv. Manage predators at regional scale;
 - v. Have meaningful input in management of cervid farms.

9. Establish Parks Canada's commitments

- i. Prioritize and coordinate roles and responsibilities for management of CWD in Parks Canada;
- ii. Revisit disease priorities in the management planning process.



Photo Credit: Parks Canada

Action Planning



Photo Credit: Parks Canada

Using an action planning worksheet as their guide, breakout groups spent an afternoon preparing strategic action plans for a number of the categories created in the previous session. Six of the nine strategic action categories identified as priorities were analyzed, discussed and summarized by the various breakout groups each consisting of three to five participants. Action plans for the six categories were presented to the plenary group and a discussion then ensued on how to turn these actions into reality. Portions of the action plans developed by groups (e.g., advantages, limits, and accomplishments) for each of the six strategic

action categories are summarized, in no particular order of their priority, in the following tables (Tables 1-6):

- 1) Develop a Parks Canada specific CWD research strategy
- 2) Develop a CWD communications and education strategy
- 3) Develop a CWD surveillance strategy
- 4) Strengthen inter-jurisdictional collaboration on CWD
- 5) Renew the National CWD Control Strategy
- 6) Manage CWD risk factors at a landscape level



Photo Credit: Parks Canada

Table 1. Action planning elements proposed by participants related to the development of a Parks Canada specific CWD research strategy.

Strategic Action Category	Strengths	Weaknesses	Benefits	Dangers	Possible Accomplishments	Measurable Accomplishments
<i>Develop a Parks Canada CWD research strategy</i>	Have existing national CWD and disease strategies	Significant knowledge gaps on distribution and prevalence	Can help to control spread and prevalence	We might be wrong about disease assumptions	Find out current level of knowledge	Better understanding of cervid movement patterns on landscape level by 2013
	<p>Have existing hyperabundant species policy</p> <p>Good internal expertise with modelling</p> <p>Good information from outside agencies</p> <p>CCWHC and other agencies have strong research foundation</p> <p>Proactive</p>	<p>Epidemiology largely unknown</p> <p>Public resistance to management measures</p> <p>Funding unknown and will be expensive</p> <p>Parks Canada lacks disease expertise</p> <p>No common policies to build upon</p>	<p>Increase basic knowledge about CWD</p> <p>Create a unified response</p> <p>Make improvements to ecological integrity</p> <p>Create and maintain healthy cervid populations</p> <p>Will be cost effective over the long-term</p>	<p>There may be no public support</p> <p>Decisions may be based on incomplete or wrong information</p> <p>Environmental change and “playing God”, we don’t know where CWD originated</p>	<p>Develop comprehensive population and disease model</p> <p>Might understand cervid/bovid dichotomy</p> <p>Better able to explain management actions to public</p> <p>Identify knowledge gaps</p> <p>Increased CWD funding</p> <p>Better understanding of cervid movement patterns</p> <p>Develop epidemiology risk assessment</p> <p>Identify risk factors</p> <p>Develop live animal tests</p> <p>Prevent, control and eradicate CWD</p>	

Table 2. Action planning elements proposed by participants related to the development of a Parks Canada CWD communications and education strategy.

Strategic Action Category	Strengths	Weaknesses	Benefits	Dangers	Possible Accomplishments	Measurable Accomplishments
<p><i>Develop a CWD communications & education strategy</i></p>	<p>Informed public will lead to more political pressure and public support</p>	<p>Knowledge gaps</p>	<p>Higher level of internal understanding of CWD</p>	<p>Partners may not buy-in to process or means</p>	<p>Communication/education strategy that outlines goals, outcomes, audiences, methods, messages</p>	<p>Create a communication and education strategy by September 2009</p>
	<p>Consistent messaging within Parks Canada</p>	<p>Impacts on ecological integrity unknown</p>	<p>May prevent 'blow-ups'</p>	<p>Public backlash</p>	<p>Better educated staff</p>	
	<p>Increased likelihood of buy-in</p>	<p>Potential lack of consistent messaging</p>	<p>May give us a template for resolving similar issues in future</p>	<p>PCA may lose public credibility and support</p>	<p>Springboard / starting point to go to outside agencies and build a more integrated com plan</p>	
	<p>Proactive</p>	<p>Changes in political landscape may result in change in support</p>	<p>May create advocates for parks</p>	<p>Volatile political climate</p>	<p>Prairie bioregion communications plans</p>	
	<p>Building relationships for a united front</p>		<p>May identify roles and responsibilities</p>		<p>Collaboration between prairie parks and partners</p>	

Table 3. Action planning elements proposed by participants related to the development of a Parks Canada CWD surveillance strategy.

Strategic Action Category	Strengths	Weaknesses	Benefits	Dangers	Possible Accomplishments	Measurable Accomplishments
<i>Develop CWD surveillance strategy</i>	Baseline CWD prevalence and cervid population distribution	Lack of shared database	Increased sample size	Retaining financial commitment	Build alternative surveillance strategies with costing	Design a population survey and CWD surveillance program by March 2009
	Experienced personnel for fieldwork and analysis	No knowledge of population response to CWD	Baseline data collection	May force Parks Canada into action	Coordinate surveillance with provinces	
	Demonstrates commitment to stakeholders and partners	Lack of human resources	Determine change in prevalence of CWD & geographical spread over time	Long term financial commitment	Better coordination with CCWHC databases	
	Strengthen relationships with support agencies and organizations	Long term financial commitment	Track population changes and distribution	Negative public perception as a result of sample collection	Provide background info to communications	
	Improve commitment to passive surveillance	Inexperience in active surveillance for CWD	Improved communication		Begin to implement opportunistic passive surveillance	
		Surveys are presently species specific	Able to measure effect of management actions			
		Surveys need to be coordinated with provincial jurisdictions	Develop in-house skill set			

Table 4. Action planning elements proposed by participants related to strengthening inter-jurisdictional collaboration on CWD management.

Strategic Action Category	Strengths	Weaknesses	Benefits	Dangers	Possible Accomplishments	Measurable Accomplishments
<i>Strengthen inter-jurisdictional collaboration</i>	<p>Strengthen existing relationships</p> <p>Substantial CWD experience in USA</p> <p>Shared concern at agency level</p>	<p>Lack of common knowledge at public level</p> <p>Uncertainty around CWD basic biology</p> <p>Lack of common goals among agencies</p> <p>Added drain on limited wildlife resources</p>	<p>More efficient and effective with partners</p> <p>Common or complementary messages</p> <p>Good working relationships built on trust results in free flow of information</p>	<p>Inappropriate use of information</p> <p>Could be perceived as agencies conspiring for their own agenda</p> <p>Leaving out partners</p>	<p>Creation of inter-jurisdictional mechanisms for implementing National CWD Strategy</p>	<p>Spatially defined action plans consistent with National CWD Strategy along with inter-jurisdictional mechanisms for implementation by January 2009.</p>

Table 5. Action planning elements proposed by participants related to renewing the National CWD Control Strategy.

Strategic Action Category	Strengths	Weaknesses	Benefits	Dangers	Possible Accomplishments	Measurable Accomplishments
<i>Renewing the National CWD Control Strategy</i>	Strengthen national profile of the disease	Action lists too large, too encompassing, too expensive	More effective CWD management	Past record of failure	Build political momentum for funding	Identify federal champion and framework for shared funding by fall 2009
	National guidance and support for current and future provincial programs		More coordinated programs and management	May stifle new, creative input	Showcase successful pilot programs Promote federal leadership Improved surveillance Consistent messaging No new foci of CWD Increase stakeholder support	

Table 6. Action planning elements proposed by participants related to managing CWD risk factors at a landscape level

Strategic Action Category	Strengths	Weaknesses	Benefits	Dangers	Possible Accomplishments	Measurable Accomplishments
<p><i>Managing CWD risk factors at a landscape level</i></p>	<p>There is time to implement plans to keep the disease out of caribou</p>	<p>No physical barriers to spread of CWD</p>	<p>Keep CWD out of national parks</p>	<p>CWD will continue to spread unchecked</p>	<p>Ban baiting and feeding of cervids in jurisdictions that currently allow the practice</p>	<p>Establish working group to phase out baiting and feeding of cervids that includes outfitters, landowners, and the provincial government (Saskatchewan Environment)</p>
	<p>Change in political bodies may favor change in thinking</p>	<p>Different mandates and jurisdictions involved</p>	<p>Keep CWD out of cervid farms</p>	<p>Future effects on rural economies (lack of deer hunting opportunities)</p>	<p>Support other agencies (e.g., Canadian Food Inspection Agency, Saskatchewan Ministry of Agriculture & Food) to reduce risk of CWD from farmed cervids</p>	
	<p>Lower ungulate density will reduce chance of CWD transmission and spread</p>	<p>Affects rural economies significantly</p>	<p>Demonstrate to stakeholders that we're willing to take action</p>	<p>Economic non-viability of cervid farming</p>	<p>Work collaboratively to manage wolves around Prince Albert National Park</p>	
		<p>Unknown ecosystem effects</p>	<p>Strengthen relationships with aboriginal communities</p>	<p>Decreased visitor experience due to low density of ungulates</p>		<p>Write strategy to reduce ungulate density</p>

MOVING FROM IDEAS TO ACTION: PARTICIPANTS' RECOMMENDATIONS ON NEXT STEPS

- 1) Participants felt that it was important to report on the results of this workshop. This would provide both a communication tool as well as a summary of workshop outcomes and possible next steps;
- 2) Parks Canada needs to immediately engage and inform the Director-General for Western & Northern Canada and the CEO on the outcome of this workshop regarding CWD and its implications for national parks. Validation and direction from the senior levels of this organization should be sought regarding the management of this disease and our policy position;
- 3) It was suggested that there be an informal meeting of Park Superintendents from the prairie region and National Office staff with members of the current Canadian Wildlife Directors Committee to encourage support for pushing the National CWD Control Strategy to the top of the agenda for this group. The need for identifying a new federal champion and earmarking funds was identified as critical to promote and activate this national strategy;
- 4) The Inter-Provincial CWD Forum that existed on an informal basis needs to be re-invigorated and resurrected. It was seen as a valuable communication, education and bridge-building tool;
- 5) Participants felt that the current workshop organizing committee, with minor changes and additions including addition of representatives from other national parks and external jurisdictions, should continue to keep the momentum from this meeting going forward. The current group was mostly in agreement to continue to act in this fashion in an informal way for the foreseeable future until validation and direction is received from the Agency in response to participants' recommendations emerging from this workshop;
- 6) Develop a Parks Canada Chronic Wasting Disease Strategy that would have a short-term focus on actions that were realistic and achievable. The Incident Command Model (ICM) could be used as a basis for a response model within this document;
- 7) Parks Canada needs to make a strong commitment toward continued surveillance for CWD in prairie national parks that are considered at greatest risk from the disease (e.g., Prince Albert, Grasslands and Elk Island National Parks). These parks may also want to consider working closely with neighbouring provincial and municipal jurisdictions to support increased surveillance efforts on lands adjacent to the park's boundaries;

- 8) Education efforts focusing on the disease and its implications need to be bolstered as soon as possible. Audiences include Parks Canada staff, visitors, and members of the general public. Consistent Agency messaging should be developed for use across national parks that, where possible, complements and reinforces messaging communicated by neighbouring provincial and federal jurisdictions;

There was not enough time left at the end of the workshop to undertake a detailed discussion and debate among participants as to how these recommended actions proposed might be developed and implemented by Parks Canada Agency. While the ideas and recommendations compiled herein do not in any way represent approved policy or direction of Parks Canada Agency, this information will hopefully act as a catalyst to stimulate further action and discussion on the management of CWD in and around national parks. The consensus of the group was that the current CWD workshop planning committee, subject to validation and direction from the Director-General's Office and Executive Board, be tasked with ensuring that these actions are completed and the organizing committee eventually be broadened to include agencies and stakeholders with an interest in CWD management within parks and protected areas in western Canada.

APPENDIX 1: List of Workshop Participants

Alan Fehr	Field Unit Superintendent - Northern Prairies	Prince Albert National Park
Ed Coulthard	Field Unit Superintendent - Southwest NWT	Wood Buffalo National Park
Rod Blair	Superintendent	Waterton Lakes National Park
Dr. Yeen Ten Hwang	Provincial Wildlife Disease Specialist	Saskatchewan Ministry of Environment
Dr. Margo Pybus	Provincial Wildlife Disease Specialist	Alberta Fish & Wildlife
Rich Davis	Bovine Tuberculosis Co-ordinator	Manitoba Conservation
Dr. Trent Bollinger	Director - Canadian Cooperative Wildlife Health Centre	U of S, Western College of Veterinary Medicine
Shane Mascarin	Range Biologist - Canadian Forces Base Wainwright	Department of National Defence
Delaney Boyd	Range Biologist - Canadian Forces Base Suffield	Department of National Defence
Crystal Rainbow	Animal Health Unit - Inspection & Regulatory Mgmt	Saskatchewan Ministry of Agriculture
Dr. Stephen Woodley	Chief Scientist - Ecological Integrity Branch	Parks Canada Agency - National Office
Murray Peterson	Resource Conservation Manager	Prince Albert National Park
Adrian Sturch	Resource Conservation Manager	Grasslands National Park
Bill Dolan	Resource Conservation Manager	Waterton Lakes National Park
Dr. Todd Shury	Wildlife Health Specialist	Parks Canada Agency - National Office
Ken Kingdon	Coordinator, Wildlife Health Program	Riding Mountain National Park
Dan Frandsen	Ecosystem Scientist	Prince Albert National Park
Ed McLean	Ecosystem Liaison Manager	Prince Albert National Park
Fiona Moreland	Senior Park Warden	Prince Albert National Park
Eva Paul	Research & Communications Assistant	Prince Albert National Park
Wes Olson	Senior Park Warden	Grasslands National Park
Norm Cool	Wildlife Biologist	Elk Island National Park
Archie Handel	Park Warden	Elk Island National Park
Rhona Kindopp	Wildlife Biologist	Wood Buffalo National Park
Dr. Jim Rettie	Monitoring Ecologist	Parks Canada Agency – Winnipeg Service Centre
Dr. John Waitthaka	Conservation Biologist - Ecological Integrity Branch	Parks Canada Agency - National Office
Rick Proven	Project Manager, National Training Unit for Resource Conservation - EI Branch	Parks Canada Agency - National Office
Carlene Gorecki	A/Communications Manager	Prince Albert National Park
Karin Smith-Fargey	Communications Supervisor	Grasslands National Park
Laurie Guyot	Communications Manager	Elk Island National Park
Shawna Clouthier	Outreach Education Specialist	Parks Canada Agency - ERVE Directorate - National Office

*** Total of 31 participants**

APPENDIX 2: Workshop Agenda:

DAY 1 - Information Exchange, Perspectives, and Case Studies

Tuesday March 18 - Room 2103, University of Saskatchewan, Western College of Veterinary Medicine, 52 Campus Drive, Saskatoon, SK

MORNING (09:00 – 12:00)

- Opening Remarks / Welcome & Introductions (*T. Shury, Parks Canada – 0.25h*)
- Overview of the Biology of Chronic Wasting Disease (*T.Shury, Parks Canada – 0.5h*)
- Overview of Current Trends in CWD Research & Management – a Landscape Level Perspective (*T.Bollinger, CCWHC and M. Pybus, Government of Alberta – 0.75h*)
- **HEALTH BREAK** (0.25h –coffee, tea and snacks provided)
- Overview of Current Trends in CWD Research & Management – a Landscape Level Perspective - continued (*T.Bollinger, CCWHC and M. Pybus, Government of Alberta – 1.25h*)
- **LUNCH** (12:00 - 13:00 – not provided)

AFTERNOON (13:00 – 17:00)

- CWD Status Reports by Province (current policies & disease politics, disease monitoring & prevalence, management program successes & failures, actual / projected environmental and socio-economic impacts)
 - Alberta (*M. Pybus, Government of Alberta – 0.5h*)
 - Saskatchewan (*Y.T. Hwang, Government of Saskatchewan – 0.5h*)
 - Manitoba (*R. Davis, Government of Manitoba – 0.5h*)
- **HEALTH BREAK** (0.25h –coffee, tea and snacks provided)
- A Primer on Canada's National Federal-Provincial Chronic Wasting Disease Control Strategy – What Does this It Mean for Parks Canada? (*T.Shury, Parks Canada – 0.5h*)
- Case Study Studies
 - Lessons Learned in Working Collaboratively with Partners to Manage Wildlife Disease on a Landscape Level - the Riding Mountain National Park Experience (*K.Kingdon, Riding Mountain National Park – 0.5h*)
 - The Management of Chronic Wasting Disease on Federal Lands at CFB Suffield and Wainwright - a Model for Federal-Provincial Collaboration in Alberta (*S. Mascarin & D.Boyd, Department of National Defence – 0.5h*)

Workshop Agenda - *continued*:

DAY 2 - Action Planning Working Sessions

Wednesday March 19 - Room 2104, University of Saskatchewan, Western College of Veterinary Medicine, 52 Campus Drive, Saskatoon, SK

MORNING (09:00 – 12:00)

- Clarify Underlying Policy Position(s) on CWD Management in the Prairie Region (*discussions for this item to be moderated by T.Shury, & S. Woodley - Parks Canada - 1.0h*)
- Layout Steps Ahead to Move From “Ideas to Action” for Management of CWD in National Parks of the Prairie Region – Idea Harvest & Card Sort Exercises (*1.0h session includes break-outs, exercises and plenary discussion sessions, moderated by R. Proven and other facilitators tba*)
- **HEALTH BREAK** (*0.25h – coffee, tea and snacks provided*)
- Layout Steps Ahead to Move From “Ideas to Action” for Management of CWD in National Parks of the Prairie Region – Idea Harvest & Card Sort Exercises - continued (*0.75h session includes break-outs, exercises and plenary discussion sessions, moderated by R. Proven and other facilitators tba*)
- **LUNCH** (*12:00 - 13:00 – not provided*)

AFTERNOON (13:00 – 17:00)

- Layout Steps Ahead to Move From “Ideas to Action” for Management of CWD in National Parks of the Prairie Region - Strategic Action Planning (*1.50h session includes break-outs, exercises and plenary discussion sessions, moderated by R. Proven and other facilitators tba*)
- **HEALTH BREAK** (*0.25h – coffee, tea and snacks provided*)
- Layout Steps Ahead to Move From “Ideas to Action” for Management of CWD in National Parks of the Prairie Region - Strategic Action Planning - continued (*2.25h session includes break-outs, exercises and plenary discussion sessions, moderated by R. Proven and other facilitators tba*)
- Complete Workshop Evaluation Form

APPENDIX 3: Strategic Action Planning Worksheet

MEASURABLE ACCOMPLISHMENT WORKSHEET

1. STRATEGY

Write in the name of the strategy.

ADVANTAGES

LIMITS

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2. STRENGTHS
In implementing this strategy at this time, we have the following strengths:

3. WEAKNESSES
In implementing this strategy at this time, we have the following weaknesses:

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4. BENEFITS
In the future of this implementing strategy are:

5. DANGERS
In the future of this implementing strategy are:

6. POSSIBLE ACCOMPLISHMENTS

Brainstorm possible accomplishments for this time period that build on advantages and acknowledge the limits

7. MEASUREABLE ACCOMPLISHMENT

Choose and accomplishment which:

- is catalytic
- is realistic
- will have substantial impact
- will inspire commitment and action.

Taking all of the above into consideration, we are committed to the following measurable accomplishment by _____ [date]

Worksheet adapted from the Canadian Institute of Cultural Affairs, Action Planning -Participant's Workbook, 1985, 1996

SPECIFIC ACTIONS WORKSHEET

8. STRATEGY

Write in the name of the strategy on this line.

9. MEASUREABLE ACCOMPLISHMENT

Write the measurable accomplishment that you are committed to on this line [from step 7]

10. SPECIFIC ACTIONS

List the specific actions needed to complete the measurable accomplishment indicated above.

- 11. If there are more than ten actions listed in Step 10 organize them into clusters that are similar in their action focus. Each cluster should represent a distinct action step.

- 12. Number the actions in each cluster in the sequence that you will do them.

13. IMAGE / SLOGAN

Create a motivating image or slogan for this action campaign.

Worksheet adapted from the Canadian Institute of Cultural Affairs, Action Planning –Participant’s Workbook, 1985, 1996

ACTION TIMELINE WORKSHEET

14. STRATEGY

Write in the name of the strategy on this line.

16. ACTION TIMELINE

Divide the timeline into the appropriate number of blocks and write the actions [from Step 12] that you have selected in the appropriate timeblock on this timeline.

15. MEASUREABLE ACCOMPLISHMENT

Copy from Step 7.

17. IMPLEMENTING TEAM

Who will be responsible for implementing this action plan? (at least one person in the planning groups; name, not roles).

18. COSTS

Write the costs (time and money) of implementing this action plan on lines below:

- a. MONEY-
- b. TIME-

Worksheet adapted from the Canadian Institute of Cultural Affairs, Action Planning –Participant’s Workbook, 1985, 1996

